

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A balloon catheter having a spirally folded balloon comprising:

a catheter body having a proximal end and a distal end; and

a radially expansible balloon near the distal end of the catheter body, the balloon having an outer surface, a proximal end, a distal end, and at least one permanent fold line formed on the balloon prior to folding, the fold line extending helically from the proximal end to the distal end of the outer surface of the balloon, wherein the permanent fold line is a groove formed by a blade scoring the outer surface.

2. (Previously presented) A balloon catheter as in claim 1, wherein from two to five helical fold lines extend helically over the surface of the balloon.

3. (Previously presented) A balloon catheter as in claim 2, wherein all fold lines are parallel to each other.

4. (Original) A balloon catheter as in claim 3, wherein the fold lines are equally spaced apart.

Claims 5-6 (Cancelled).

7. (Previously presented) A balloon catheter as in any one of claims 1 to 4, wherein the balloon is folded along the preformed fold lines to form lobes.

8. (Previously presented) A balloon catheter as in any one of claims 1 to 4, wherein the balloon is folded along the preformed fold lines to form flaps.

9. (Previously presented) A balloon catheter as in claim 1 to 4, further comprising a scoring structure disposed over the balloon.

10. (Previously presented) A balloon catheter as in claim 9, wherein the scoring structure comprises at least one scoring element helically circumscribing the balloon and aligned with the at least one helical fold line.

11. (Original) A balloon catheter as in claim 10, wherein the scoring element continuously circumscribes the balloon.

12. (Original) A balloon catheter as in claim 10, wherein the scoring element comprises a plurality of segments.

13. (Original) A balloon catheter as in claim 10, wherein the scoring element comprises a wire.

14. (Original) A balloon catheter as in claim 10, wherein the scoring element is secured to an outer surface of the balloon.

15. (Currently amended) A balloon catheter comprising:
a catheter body having a proximal end and a distal end; and
a radially expansible balloon near the distal end of the catheter body, the balloon having an outer surface, a proximal end, a distal end, and at least one groove permanently formed in the surface and extending helically from the proximal end to the distal end of the surface of the balloon, wherein the groove is formed by a blade scoring the outer surface and the balloon is folded along the groove to form at least ~~one~~ one recess; and
at least one helical scoring structure located within the helical recess of the balloon, wherein the helical recess shields the scoring structure from exposure when the balloon is not expanded.

Claim 16. (cancelled).

17. (Previously presented) A balloon catheter as in claim 15, wherein the scoring element continuously circumscribes the balloon.

18. (Previously presented) A balloon catheter as in claim 15, wherein the scoring element comprises a plurality of segments.

19. (Previously presented) A balloon catheter as in claim 15, wherein the scoring element comprises a wire.

20. (Currently amended) A balloon catheter as in claim 15, wherein the scoring element is ~~not secured to an~~ attached to the catheter body and not to the outer surface of the balloon.

Claims 21-73 (Cancelled)